Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Legal and Financial Issues Related to Exelon's Pebble Bed Modular Reactor Public Workshop

Docket Number: Project Number 713

Location: Rockville, Maryland

Date: Wednesday, March 27, 2002

Work Order No.: NRC-290 Pages 1-81

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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PUBLIC WORKSHOP

LEGAL AND FINANCIAL ISSUES RELATED TO

EXELON'S PEBBLE BED MODULAR REACTOR

SECY-01-0207

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WEDNESDAY

MARCH 27, 2002

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ROCKVILLE, MARYLAND

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The Public Workshop met in the Auditorium at Two White Flint North, 11555, Rockville Pike, at 1:00 p.m., Chip Cameron, Facilitator, presiding.

PRESENT:

Francsi Cameron	Facilitator
Dennis Allison	Office of Nuclear Reactor Regulation
Amy Cubbage	New Reactor Licensing Project Office
Michael Dusaniwskij	Office of Nuclear Reactor Regulation

PRESENT: (CONT.)

Marsha Gamberoni	New Reactor Licensing Project Office
Clare Goodman	Office of Nuclear Reactor Regulation
Tim Harris	Office of Nuclear Reactor Regulation
Glenda Jackson	Office of the Chief Financial Officer
Janice Moore	Office of General Counsel
Jerry Wilson	Office of Nuclear Reactor Regulation

ALSO PRESENT:

Russell Bell	NEI
Kevin Borton	Exelon
Rod Krich	Exelon
Ed Lyman	NCI
John Matthews	Morgan Lewis
Jim Riccio	Greenpeace
Ron Simard	NEI

I-N-D-E-X

P-R-O-C-E-E-D-I-N-G-S

1:12 p.m.

FACILITATOR CAMERON: Okay. If everybody could grab a seat, we're going to get started. Good afternoon and welcome to the NRC's Public Workshop on some specific issues related to a possible license application by the Exelon Corporation for a Pebble Bed Modular Reactor.

My name is Chip Cameron, and I'm the Special Counsel for Public Liaison, in the Office of General Counsel, here at the Commission. It's my pleasure to serve as your facilitator for today's meeting.

I just wanted to cover a few items about meeting process before we get into the substance of today's discussion. The first thing I'd like to talk about, briefly, is what are the objectives for today's meeting.

The first objective is to give the public information on several issues that have been raised in the prelicense application review on an Exelon Pebble Bed Modular Reactor, as well as information on the prelicense application review process, generally.

And the second objective is to listen to any concerns or suggestions that you might have on

these issues so that the NRC can factor those comments, those suggestions, those concerns into it's evaluation process.

In terms of the format for the meeting, we're going to have a number of brief NRC staff presentations on the individual issues and then we'll go to a discussion on that issue with all of you out there. I think it's worth emphasizing that today's meeting is a discussion with the public on these issues, as opposed to a meeting between the NRC and a perspective license applicant. So, we encourage discussion and comment from everyone in the audience.

We do have representatives from Exelon and from other parts of the Nuclear Industry, the Nuclear Energy Institute. They will also be participating in the discussion. Because Exelon will have pertinent information that you'll be interested in on these issues, after the NRC Staff presentation on each issue, I'm going out to the folks from Exelon to see if they have any further amplification, question, whatever, on that issue, and then we'll go out to the rest of the audience.

Ground rules, very simple. I would just ask that only one person at a time speak. We are taking a transcript of the meeting. One person at a

time will obviously allow us to get a clean transcript. More importantly, it will allow us to give our full attention to whoever has the floor, at the time. I would like to make sure that everybody gets a chance to talk. So, I would just ask you to be concise in your remarks.

The last ground rule, such as it is, is if you do have anything to say, just give me the "hi" sign and I'll either bring you this talking stick or there are the floor mikes here. Just again, say your name and affiliation, if appropriate, for the transcript.

The agenda is devoted to a number of specific issues. There are copies of the agenda and other information outside on the table, if you don't have any of those yet.

We realize there may be other concerns; concerns other or issues other than the ones that are listed on the agenda that relate to NRC responsibilities. There may be other concerns outside that, but, we do want to hear what people have to say on those other issues. So, we'll try to hear that too.

The primary focus is to discuss the issues on the agenda for today's meeting. If something comes

up that would be more appropriately discussed at another part of the agenda, we'll just note that in the parking lot here, and we'll be sure to go back and cover those before we adjourn today. We will try to get everybody out of here by 5:00 p.m.

I'd like to just introduce the NRC Staff who are going to be making presentation today, so that you know who they are. And, I can go through the agenda this way, too. We are going to start out with some opening remarks from Marsha Gamberoni. Marsha is the Deputy Director of the New Reactor Licensing Project Office at the NRC.

Then we're going to go and try to give you some context on this whole business. Amy Cubbage, who's right here, is going to talk about some background issues. Amy is a Project Manager. She's the Project Manager for the Pebble Bed Modular Reactor, in the New Reactor Licensing Project Office.

Next, we're going to go to our first block of issues. The first issue is number of licenses. Jerry Wilson, who's the Senior Policy Analyst, again, in the New Reactor Licensing Project Office, is going to talk about that.

We're then going to go to the annual fee issue. Glenda Jackson, who's right up here in front,

who's the Assistant for Fee Policy and Rules, in the Office of our Chief Financial Officer. Glenda will talk about that.

Then we're going to go back to Jerry again, for testing of new design features. After were through with those, and of course, after each one of those, we'll go out to you for questions and comments.

After we're through with that set of issues, we'll take a short break and then we're going to come back for another set of issues. Fuel cycle issues will be done by Dennis Allison, who's right over there. Dennis is with our Office of Nuclear Reactor Regulation. He's sharing that topic with Tim Harris, who's with our Office of Nuclear Material Safety and Safeguard. Tim is right over here.

We're next going to go to Operator Staffing. Clare Goodman, who's right here, is going to talk about that. Clare is a Senior Human Factors Specialist in our Office of Nuclear Reactor Regulation. She's in the Operator License and Human Performance section.

We're then going to go to financial issues. We have Janice Moore, who's right up here, at the table. Janice is the Assistant General Counsel for Reactor Programs, in the Office of General

Counsel.

We're also going to hear from Mike Dusaniwskyj, he's right here. Then Mike's also going to cover decommissioning funding.

All right. You can see we have a lot to do. One of the things that I think that this staff is going to try to do, sort of as an overarching issue, is to give you an idea of some of these issues that are going to be discussed; how are those issues going to be resolved? What's the regulatory vehicle for the resolution of those issues?

And I guess with that, I just would thank you all for being here. Marsha.

MS. GAMBERONI: I'd like to welcome everyone to our workshop on legal and financial issues associated with licensing new plants. As Chip mentioned, I'm Marsha Gamberoni, the Deputy Director, in the New Reactor Licensing Project Office, in NRR.

I really wanted to emphasize the purpose of this workshop; and that's to discuss the issues that were addressed in SECY-01-0207. If anyone needs a copy of that for referencing today, I think there's some available out on the table.

That SECY is a legal and financial issues related to Exelon's Pebble Bed Modular Reactor and

these issues also include staff's -- the issues discussed in that paper are the staff's initial review of the white paper, submitted by Exelon, last May, as well as some additional issues identified by the staff.

Amy covers the Project Manager in NRR for the pebble bed modular reactor. We'll go into more detail regarding the background of those issues.

With our teams success today, will be stakeholders having an understanding of the status of the staff's review of each of these issues. And, for the staff to obtain input from stakeholders, on each of these issues.

Just going back a bit, we had a general workshop last summer, that I characterize as an introductory workshop to give stakeholders an overview on a number of high level activities associated with licensing new plants. As stated in that workshop, we planned on additional workshops to ensure effective communications as specific issues developed. We will schedule additional workshops depending on the level of interest on any specific topic.

But, before I turn the floor over to Amy, I wanted to highlight some of the other communication tools we're using to reach out to stakeholders. All

of our meetings with industry applicants or potential applicants are public meetings. We have been offering, at those public meeting, an opportunity for public comments. The meeting notices have stated this. We've also handed out the public meeting forms, which I believe are back there also today, to obtain feedback on these meetings.

An example of this, is the meeting tomorrow, from 9:00 a.m. to 2:00 p.m., on PBMR, that cover technical issues such as fuel qualifications and early site permits. It's in T3B45, in this building.

I also want to note our specific web page for New Reactor Licensing activities, is still in the process of being reviewed, as part of our overall review of the NRC site. We, personally, in New Reactor Licensing Project Office, are anxious to get that web page up because it was a benefit and a useful tool for us. Right now, our current schedule or the agencies current schedule, to get that out, is May.

With that, I'll turn it over to Amy.

MS. CUBBAGE: Thank you. Before I get started, I'd like to point out Stuart Rubin, in the audience. He's the Project Manager in the Office of Research, who has overall responsibility for the PBMR preapplication review.

I'm going to take a few minutes to provide some background information on the PBMR preapplication review, before we start to discuss the specific issues.

The Pebble Bed Modular Reactor, or PBMR, is being considered for licensing in the United States, by Exelon Generation Company. The PBMR is a modular, gas-cooled reactor design. Each reactor or module will generate, approximately, 110 to 140 megawatts electric. A PBMR facility would consist of up to ten reactor modules.

Exelon has indicated that they plan to submit an application for combined license, or COL, for a PBMR facility in early 2004. The preapplication review of the PBMR design began in April, 2001. Since then, we've held monthly meetings between NRC, Exelon, the Department of Energy, and interested stakeholders. Meetings have focused on legal and financial issues, Exelon's proposed licensing approach, and also, identification of key technical safety and policy issues.

In a May 10, 2001, letter Exelon provided positions on legal and financial issues related to modular plants, gas-cooled reactors, and merchant plants, and requested staff review of these issues.

On November 20, 2001, the staff issued SECY-01-0207. This paper provides preliminary staff positions on these issues identified by Exelon and related issues identified by the staff.

The purpose of today's workshop is to communicate the staff positions on these issues and seek stakeholder feedback. Comments on the issues discussed in the SECY paper, can also be provided in writing by April 10th, to my address as indicated. Final policy recommendations on these issues will be provided to the Commission in June, 2002. The PBMR preapplication review is scheduled to continue into 2003.

At this time, I'll turn it over to Jerry Wilson, to start the discussion with the first issue.

FACILITATOR CAMERON: Amy, can I just check in with people before we go to Jerry. Is there any questions about the preapplication review schedules, or anything that Amy went into, before we go on?

Okay, and this is not your last opportunity to ask questions of that type, if something comes up during today's discussion.

Thank you very much, Amy. Jerry.

MR. WILSON: Thank you.

(Slide change)

MR. WILSON: In their papers, Exelon made a proposal that they are going to apply for a single combined license, to license multiple pebble bed modular reactors on one site. And, so the issue before the NRC is, could we issue a single license for multiple reactors.

By the way, I want to add that Janice Moore of the General Counsels Office, will be assisting me in the discussion of this issue.

(Slide change)

MR. WILSON: We reviewed the Atomic Energy Act and the NRC's regulations, and came to the conclusion that the Commission could combine into one license, individual combined licenses that would allow construction and operation of multiple reactors of the same design.

However, we see a number of problems with that approach. We've discussed that in our paper. One of the problems is that single combined license, under the Atomic Energy Act, has a limited duration of 40 years. So, obviously, the decision was made to build multiple plants under that one license, then some of those plants would have a significantly shortened operating life.

Another concern of the staff is that if you granted a single license for a particular design to be built multiple times over that licensed life, you are in effect, are granting a design approval for that particular design; something similar to what we do on our other provisions and our regulations where you get a design approval and different applicants are able to reference it and build that particular design. That type of an approach is always had a time duration limit on it.

Our current policy, in fact, for design approvals, under, pending two of our regulations, is to limit those design approvals to a five year duration. So, if we granted a single license for multiple reactors, then that would, in effect, be approving that design for 40 years, which is clearly in violation of our policy on design approvals. And so what we stated in the papers is that we would see a need, if that approach was used, to somehow limit the duration of that design approval. We're recommending, at this point, that it be limited to five years, consistent with our current policy on design approvals.

Those are two of the major concerns we see with this approach. Also, we note in our paper that

it's not clear that the benefits that Exelon is seeking from getting a single license, would come along with that approach. Examples discussed in the paper is issues such as Price-Anderson, retrospective premium payments, which I understand will be discussed later.

So, with that Chip, why don't I open it up for discussion.

FACILITATOR CAMERON: Great. Let's ask if any of the Exelon folks have anything that they want to add based on what they heard?

MR. SIMARD: I am Ron Simard from NEI, and we've been talking with Exelon because their application is just one example of the modular designs that are on the drawing boards now.

We've been looking at some of these issues and we think it's possible to achieve a single hearing, a single application, a single proceeding, a 40 year lifetime for each of the modules at this plant, a single facility, as defined under Price-Anderson, and a single facility that would lend itself to Part 171 annual fees. Our thinking on it is coming together and we're going to share what we think is possible with the NRC staff in a white paper, that basically takes an integrated approach.

If you look at the tentacles that this has into all the regulations, like Part 171 on fees, or the other regulations on indemnity protection and so forth, I think it's necessary to look at this in an integrated way. That's the way we've approached it, and hope it will help the thinking on this if we send this white paper.

Let me make an observation that may help the way we think about that second bullet. As Jerry pointed out, we need to look at this in a different way now. We've always talked about licenses to manufacture or design, or certifications for design that would be built by different people, at different times, at different places.

What's different about this, is we're talking about a series of modules that are going to be built at the same site, by the same applicant. They're going to be linked through a common control room. We're looking at it from the point of view, how can we maintain standardization over that set of modules, in terms of the way they are fabricated, perhaps off site, the way they're constructed, the way they're operated, and in terms of NRC's regulatory oversight.

Our objective is to have, if eventually

you're going to link ten modules at a site, our objective is to have the same current licensing basis and so forth. Let me just ask as you think about it. Think about a ten module site.

Let's assume that an applicant is able to bring one module a year on line. Start the clock running at T=0 with the combine license. Let's say it's three years later, T=3. Three years later, the first module comes on line. It would be four years later, the fifth module is coming on line. If we had to re-evaluate the design every five years, the fifth module and tenth modules would be subject to this sort of thing.

So without getting into, you know, the right way of doing this now, let me just ask that you think about it in terms like that, as a way of highlighting some of the practical difficulties we have in reaching those basic objectives of maintaining standardization across the ten modules.

Thank you.

FACILITATOR CAMERON: Okay. Thank you, Ron.

So, that's one thing to note. There is going to be a white paper on this issue.

Does the NRC, Jerry, or anybody, do you

have any questions in regard to what Ron just said?

MR. WILSON: Well, somewhat of a comment more than a question, and that is that we have been thinking about this. The concern is that time duration, staying with the example that Mr. Simard gave. You have to remember, once that initial plant starts operating, operating experience will becoming available. Also, during this time period, new regulations may arise.

So, we have to remember there's an important safety issue here, when we're talking about design approvals extended over a long period of time. If there's gaps in that time period between the first couple of plants and then subsequent plants, how would you be able to factor in information from operating experience, or new regulations that may come up from other experience? I think we need to be able to do that.

That's an important aspect of why design durations have always been limited in the past. From our perspective, there's an important safety issue here.

FACILITATOR CAMERON: Okay. Thanks, Jerry.

Anybody else on this issue, any questions

you want to ask about it, or any comments?

Let's go over here to Rod.

MR. KRICH: Rod Krich, Exelon. Jerry, that same issue is done today with plants or was done back when plants were being built. And new safety issues that came up got incorporated into the new plants as well as were backfit on the old plants, if in fact, it was a safety issue. So, I don't see that there is an issue there.

MR. WILSON: Well, my point is that if there was a design approval, that design would expire. If it came in for a renewal or a new design came in, that new design would have to meet current requirements. And also, our review would be based on operating experience that had taken place prior to that. So, we don't want to lose that in the overall process here.

FACILITATOR CAMERON: Let me just quickly ask Ron. You've heard this discussion, Rod's comment, will this issue be something that you could address, will address in the white paper?

MR. SIMARD: Yes.

FACILITATOR CAMERON: Okay, good. Jim, do you have a question or comment, at this point?

MR. RICCIO: Hi, I'm Jim Riccio, with

Greenpeace. I guess our concerns are that, given the fact that this is basically an experiment, that you don't have any real operating experiences with this reactor design. You're applying for a license prior to even full testing being done in South Africa. I think we would want to give the NRC the flexibility to make changes, even after you've approved one design on this.

Obviously, we don't like this design, at all. We don't think it should be licensed, and apparently there are others that don't think so either. To kind of make the NRC hop through the hurdles of having to do a backfit for design, which is basically an experiment, doesn't seem to be appropriate.

FACILITATOR CAMERON: Okay. Thanks, Jim. NRC noted that issue, also.

Anybody else on this particular issue before we go on to the fee issue? And again, we'll keep moving through these. If we need to or have time to circle back and address anything, we'll do that.

MS. GAMBERONI: Chip, before you go on. Do you have the current date of that white paper the NEI's planning on submitting?

FACILITATOR CAMERON: This is an

anticipated date of submission for the white paper.

MR. SIMARD: I noted Amy's statement earlier, that you'd like to have stakeholder input by April 10th. So, that's sort of the drop dead date. Sooner than that, if we can.

MS. GAMBERONI: Okay. Thanks.

FACILITATOR CAMERON: It is a good example of a performance requirement, I guess, soon. Anyway, thank you.

Okay. Let's go to Glenda Jackson, Annual Fees.

MS. JACKSON: Good afternoon. Exelon had raised the issue of the annual fees in the case of multiple modular reactors, indicating that they believed that it was not reasonable to assess a separate annual fee for each modular reactor. Also indicating that, that would have the effect of penalizing Exelon for choosing a modular design.

I'm going to give just a brief background on the laws that govern our fees now, just to give the audience some idea of the basis for our fees. We actually have two major laws that govern our fees. The first one being the Independent Offices Appropriation Act of 1952. This fee under that law are covered under 10 CFR Part 170. Primarily, they

are fees assessed for our licensing reviews and inspections.

The law says that the fee should recover agency's cost of providing any service or thing of value to identifiable recipients. That each charge should be fair and based on the cost of providing the service. And then the Omnibus Budget Reconciliation Act of 1990 requires us to assess those fees.

With regard to the Omnibus Budget Reconciliation of 1990 and it's amendments, those fees are assessed under Part 171. They are our annual fees. The OBRA 90 requires us, as I said, to recover the IOAA fees.

Then, pretty much, the remainder of our budget is to be recovered through annual fees. There was a recent amendment to the law that allows us to reduce the fee recovery amount by two percent a year. So, for 2002, we're down to 96 percent. We will reach 90 percent in 2005. That's what the law says, that it will be reduced two percent a year until we reach 90 percent in 2005.

The annual fees are to be assessed to licensees, not to applicants, to recover the cost not recovered through the IOAA fees. The aggregate amount of the charges must be fairly and equitably allocated

among the licensees or classes of licensees, to the maximum extent practical.

The annual fees must reasonably reflect the cost of providing the services to the licensees or the classes of licensees. Those licensees who require the greatest expenditure of our resources should pay the greatest annual charge.

That's just a little background on how we get to the annual fees. With regard to the issues raised related to modular units in the pebble bed, we do not currently have in our fee regulations, in the annual fee regulations, any reference to combine licenses under Part 52.

In the SECY that was referenced earlier, we advised the Commission that we were going to be including in our proposed FY2002 Fee Rule, a revision to Part 171 to specifically authorize us to assess annual fees to combined license holders. The proposed rule is now actually being published in the Federal Register, today.

We are proposing to a change to Part 171 to specifically include combined licenses issued under Part 52, to indicate the assessment of those annual fees, would begin only after the construction had been completed, all regulatory requirements have been met,

and the Commission has authorized operation of the reactor.

We're also clarifying in this rule, that annual fees are assessed per license and not per unit. The language currently in the rule says per unit. But, actually we assess fees per license.

At this time, the NRC is not proposing an annual fee amount or indicating whether there would be a separate category for these types of licenses. We are not sure how this is all going to work out, how many licenses would be issued, what the regulatory requirements are going to be. So, those decisions will be deferred until the information is known.

Chip?

FACILITATOR CAMERON: Excellent. Kevin, any comments on that?

MR. BORTON: Yes, this is Kevin Borton from Exelon Generation. We've looked at the SECY proposal and we found it to be understandable. We also understand the NRC's position about gaining additional information about specific sites before they could assess fees. So, in general, we agree with the position that the NRC has currently, on that issue.

FACILITATOR CAMERON: Just one

clarification from the Facilitator, is there a proposed rule out already?

MS. JACKSON: Yes, it's published today in the Federal Register.

FACILITATOR CAMERON: Okay.

MS. JACKSON: I haven't actually seen a copy, but I understand it was published.

FACILITATOR CAMERON: Glenda, when's the comment period closed?

MS. JACKSON: It would be 30 days from today's date. So, it will probably be April 26th.

FACILITATOR: Okay. Any other comments on the fee issue?

Okay. Thank you very much, Glenda. Just to reiterate, there is a proposed rule out in the Federal Register. The comment period will close approximately the end of April.

All right. Let's go back to Jerry Wilson, to talk about testing of new design features.

MR. WILSON: Thank you, Chip. The origin of this issue goes to a letter Exelon sent in May 25, 2001, where they talked about their licensing plan for the pebble bed modular reactor. In that letter, they indicated that there were plans to do demonstration testing for this design on a prototype pebble bed

reactor in South Africa. It was also indicated in that letter, that Exelon assumed that they could get a combined license to build the pebble bed reactor here in the United States prior to completion of that demonstration testing.

So, with that in mind, the issue before the staff is, should a combined license be issued before completion of all testing necessary to demonstrate the performance of the safety features in this new design?

(Slide change)

MR. WILSON: Now, the staff's position on this; I think the origin goes back to the advanced reactor policy statement that the Commission issued in July 8, 1986. In there, the Commission stated that, as a matter of policy, they require a proof of performance testing for all advanced reactor designs. When they said that, they were speaking of new safety related component systems or structures. They also pointed out that the type of testing would be design dependent.

Now, this issue of testing for advanced reactors became our principle issue on the creation of the licensing processes, in Part 52, which was issued in 1989. At that time, the principle focus of

discussion amongst the industry was design certification. So, that was also the focus in writing that rule.

In there, there's a provision in Part 52 about qualification testing for certified standard designs. It has, as you'll see; by the way were talking about Section 5247(e), of Part 52. It talks about separate affects test, integral system tests, or, even possibly, a prototype plant, that would do this type of testing. Once again, the Commission's goal here, is that new design features would be demonstrated to be able to perform as predicted in the safety analysis for that time.

With the issue arising with pebble bed, we recognize that there was an oversight in Part 52. It didn't cover custom plant designs but only certified designs. So, we're developing a proposed rule, right now, to update Part 52. One of the issues were looking at in that development is correcting that oversight, such that the requirement for demonstration testing covers all advanced reactor designs.

We have released draft ruling, which is on our rulemaking website. It has a provision dealing with that issue on the draft ruling. I anticipate that there may be some sort of a provision in our

proposed rule, which I expect will be issued in the not to distant future. This particular matter will be considered by the Commission and can be commented on during the comment period.

Why don't I turn it over to you, Chip?

FACILITATOR CAMERON: Okay. Thank you, Jerry. Yes?

MR. BELL: My name is Russell Bell and I'm with the Nuclear Energy Institute. Part 52 certainly requires this sort of demonstration testing for certified designs. The question is, should the similar requirements be applied to applicants for combined licenses?

I think just to correct the question that was on Jerry's previous slide, should a combined license be issued before completion of all testing necessary to demonstrate. "All" is always a strong word. No matter what plant we're talking about, there's extensive startup testing that every new nuclear power unit needs to go through as a condition of its license and successfully complete. Certainly, that's the case in "all", for all units. I can use the word "all" in that case. I just wanted to clarify that.

We think that there was a conscience

decision to apply a requirement for demonstration in prototype testing for design certifications and not for combined license applications, in the original rule by the Commission, at the time. That it was a conscience decision, not an oversight, as Jerry indicated.

Our sense of that derives from the statements of consideration, where the Commission recognize that a prototype testing would overly, and unnecessarily burden perspective applicants and discourage bringing the market of innovative, new designs. They explicitly envisioned licensing the prototype.

The alternative would be to get the design certification. First, satisfy those requirements. Then, in serial fashion, go to the combined license process, construct, then operate the plant.

That’s not the only way to get a license under Part 52. You can go directly to the combined license phase. And, at that point, the NRC has significant authority to request as much information as is needed for them to make their safety determination. That authority exists today.

Our point would be, or our sense is that, no new requirements for combined license applicants

are necessary in this area that the NRC has authority already, including the ability to impose a condition on the license that would require completion of a series of demonstration tests of any innovative safety features, to insure completion of that testing, prior to operation of that unit.

So, our sense is that no new requirements are needed. Further, that this issue is not an oversight, it was conscience and was dealt with in the original rule. There's a question in our minds whether the issue should be reopened in the upcoming rulemaking.

FACILITATOR CAMERON: Okay. Thank you, Russ. We're going to go to Jim, in a minute.

Jerry, do you have any questions, any clarification you need in regard to what Russ said?

MR. WILSON: Just make it clear that I don't agree with Mr. Bell's interpretation. But, the rulemaking will give the Commission an opportunity to make this issue clear. I don't know what its intention is with regard to what I call qualification testing and new safety features.

Our expectation is that you have a new design feature, but which there isn't previous experience that that feature would have to be

qualified through some sort of a testing program. That testing would have to be done before the Commission would issue a license.

FACILITATOR CAMERON: Okay. Thank you.

MR. RICCIO: I don't mean to get redundant on you, but again, given that is an experimental reactor, it would seem only reasonable that you would do thorough testing.

I would recommend for anyone here to take a look at the Powers Trip Report, from October, 2001, which calls into question the certifiability or the license ability of this reactor design, here in the States. This reactor design thoroughly abandons all the defense indepth characteristics that exist on the current reactor designs and it's supplementing them with a test reactor in South Africa, which is continually being tweaked by even the South African government.

It would only seem logical and prudent that if you were to go ahead and attempt to build this design, that you would at least test it first.

FACILITATOR CAMERON: Okay. Thanks, Jim.

I'm going to put the Powers Trip Report up here in the parking lot. You're using it to illustrate a point about need for testing. I'm not

sure that people know exactly what the Powers Trip Report is and maybe we can go back to this later and get a description of it, unless you want to give us one right now?

MR. RICCIO: I guess I just have a question for the staff as to whether or not the defense indepth philosophy is actually a legal issue or is that just past history?

FACILITATOR CAMERON: Jerry, do you understand what Jim is asking?

MR. WILSON: I'm not sure what you mean by a legal issue, but certainly defense indepth is an important part of the NRC's review philosophy. We certainly consider that when we are evaluating new designs.

MS. GAMBERONI: Chip, just let me mention that, you know, the staff is aware of the reference that Mr. Riccio is making due. This letter or Trip Report from Powers and some of the technical issues that are raised in there, we are looking at.

As I mentioned, there is a meeting tomorrow. At these periodic meetings with Exelon, we're looking at the technical issues and reviewing them. So, some of these issues that are raised in there will be covered during those periodic meetings

with Exelon.

FACILITATOR CAMERON: And just for clarification, since we might as well get this off the table now. What is this, true as powers? What's a Trip Report and is it available to people?

MR. RUBIN: The Powers Trip Report is a report written by Dana Powers, member of the ACRS, following his participation in an October workshop that the NRC conducted with a number experts in HTGR's and regulatory oversight in advanced reactors. The purpose of that meeting was to illicit safety issues that might be associated with high temperature reactors and research needs.

The work and the ideas that came out of that workshop were documented by the staff, in its own workshop summary report. Dana Powers, who was a member of the workshop, wrote his own Trip Report, if you will, on his views and insights that he took away from that workshop.

I think if you compare the summary that was prepared by the staff, in terms of the issues that were identified at the workshop, they're very much similar and expanding upon what Dana Powers had in his summary report. I would say that all of that is being factored into the NRC's advanced reactor research plan

to sweep up all of the issues that came out of the workshop, including Dana's issues. It's all for to the extent where you can address those issues.

We'll be meeting with Exelon as we go through the preapplication review to address these issues. In so far as defense indepth is concerned, it is a very important issue for advanced reactors. The way you balance defense across prevention protection, mitigation, and emergency response is somewhat different than advanced high temperature reactors and light water reactors.

That is something the staff is placing a lot of emphasis on and we're continuing to evaluate that. We're very much understanding of Dana's concerns and we continue to look at that.

As the design becomes more apparent, there's more information becomes available, we'll be in a better position to evaluate that issue.

FACILITATOR CAMERON: Okay. Keep in mind that the report came up in the context of whether how much testing needs to be done. There may be further discussion to be had on the report itself or defense indepth, later on.

Let me check in and see if anybody has anything else. Rod?

MR. KRICH: Rod Krich, Exelon. Just to clarify, that workshop was for all gas-cooled, was actually for advanced designs, including steam cycle, gas-cooled reactors. I just want to be clear, it wasn't just looking at PBMR type designs.

FACILITATOR CAMERON: Okay. Let the transcript note that Stu was agreeing with that comment.

Okay. Ron or Kevin?

MR. SIMARD: I just wanted to say, there's one point in which we're in agreement with Mr. Riccio. I never thought I'd be saying this, but the issue is not going into commercial operation of this plant, without having thoroughly demonstrated the unique, new safety features through test or design or whatever. The issue is up there on the screen. Do you have to require all this to be done prior to issuance of a license or, as we have always done in the past, as part of the start up and operation, before you go to full power, do you demonstrate it? That's the issue.

So, we're not disagreeing on the basic premiss, that you need thorough assurance that these features would perform.

FACILITATOR CAMERON: And Kevin?

MR. BORTON: Kevin Borton from Exelon.

Let me first state that our position was to present to the NRC, adequate experience regarding the pebble bed reactor and some of the principles behind this type of design. There has been a lot of research and actual 20 years of operation of pebble bed reactor in Germany.

What we're trying to do is take a new evolutionary approach to this older design. So, what we're proposing is that we're going to bring adequate experience and information available about the proof of concept for this type of design.

Our testing that we're planning, beyond that, will be confirmatory in nature. To confirm that the evolutionary design and some of our principles due match up with our earlier data and experience.

I guess the other point that I would like to make is that there is a clear, we agree with NEI, I think there is a clear distinction between design certification and COL when it comes to looking at this area of testing. The design certification is effective for 15 years. Anyone can incorporate by reference to a design certification by any applicant without further NRC review.

There is a lot of backfit protection afforded by design certification. In contrast with

the COL, it's only for single facility with a single applicant and all subsequent facilities need to be re-reviewed by the NRC. There is broad authority to impose backfits on lessons learned from the earlier facilities.

So, it's really our point here again, and I would agree with NEI again, that the issue is, is what type of testing is required prior to COL approval? And that we're asking for us the right to go ahead and do confirmatory testing, either during NRC review of the COL, or afterwards, which is more traditional with light water reactors.

FACILITATOR CAMERON: Okay. Thank you.

Just one final note on this. As Jerry pointed out, the regulatory mechanism for the closure on this issue is going to be a rulemaking. There will be a proposed rule out on Part 52 covering a number of issues. One of those issues will be the custom design issue that we're talking about now. Comment will be invited on that issue.

Anybody else here have anything to say on testing of new designs?

Do you want to say one further thing?

MR. BORTON: Kevin Borton. Just one final note. I don't recall if you mentioned earlier or not,

but we did propose, in writing, we put a letter in November 27, 2001, regarding these issues. It talks about the statements of consideration and some other provisions like Reg Guide 170, which are adequate to allow this type of testing.

MR. KRICH: One more quick question, Jerry.

This is Rod Krich with Exelon. To do prototype testing you have to have a prototype plant and to get a prototype plant you have to have a license. So, there's a dual loop here, an error, I think, in part of your argument.

FACILITATOR CAMERON: Okay, and we're going to go right over here to this gentleman.

MR. PARME: Larry Parme, General Atomics Company. I would just like to also add to the words that NEI and Exelon have meant. That I think, Jerry, we are quite concerned in our own work on advanced reactors, at the proposal for rulemaking, that you have described.

It seems to me, in experience coming up here, that there has always been a difference in talking about the kind of testing and development programs that gives you a high level of confidence that the safety systems will work. And later,

confirmatory testing, acceptance testing, if you will, after the start up of a plant, with a license.

We're very concerned that what you are proposing here, could make the deployment of advanced reactors, that we believe could give the safety beyond the safety of reactors today, that it could be very negative to the further development and deployment of these.

FACILITATOR CAMERON: Okay. Let's do one final comment on this issue and then we can move on.

Let's go to Jim Riccio.

MR. RICCIO: Sorry, I didn't mean to leave out General Atomics. There's a couple of things that seem to be needing to be addressed. You have the Powers Trip Report which calls into question the certifiability of this reactor design. You have the ACR's letter from several years ago, which called reactors that lacked these containments or similar confinements, a major safety trade off.

We're moving down a path where we are talking about the licensure of reactors designs that really haven't been thoroughly been tested or really thoroughly exist despite the THTR from Germany, which I believe had an accident, right?

The THTR? You're talking about the AVR.

Okay, sorry.

It would seem that a Commission policy on whether or not a reactor without a containment should be built in this country. We are wasting a lot of people's time.

FACILITATOR CAMERON: Yes, let me make sure, since that was an important point.

The question that was asked, wasn't really a question but speculation, that there might have been an accident with a particular model.

Rod, could you just put that on the record, what you said to Jim?

MR. KRICH: This is Rod Krich with Exelon. What we've been referring to is the 20 years of experience in Germany with the AVR, which was a test reactor. It was a small reactor, but it is basically the same design as what we're talking about for the pebble bed.

There was another reactor built that was much larger. It was a THTR. It ran for a couple of years and then, as my understanding is, it shut down because basically there was no market for it, at that time in Germany, or in the world.

The other thing that I wanted to clarify, our design for the PBMR, includes the containment

building. So, the issue of not having containment is really a red herring. Our design includes a containment building. It has included a containment building from the beginning.

FACILITATOR CAMERON: And the question on the accident?

MR. KRICH: As far as I know from the operation of THTR, which is what Mr. Riccio referred to, there was no accident there.

FACILITATOR CAMERON: All right. Thank you.

Look for this proposed rule. As Jerry said, there is a draft provision of it up on the NRC website.

Why don't we move on and see if we can deal with fuel cycle issues.

Thank you, Jerry.

And, I guess that Dennis are you going to -- how do you guys want to do it. Dennis, do you want to come up first? All right. Good

MR. ALLISON: Good afternoon. The issue that we're talking about here is simply, that we have tables S-3 and S-4, in Part 51, and what those do for the licensing process is they take off the table and specify by rule, what the environmental impacts of

mining and milling and transportation are, so that it's not necessary to deal with those in each individual licensing case. They apply to LWR's but they don't apply to the pebble bed modular reactor or any other kind.

So, Exelon made a couple of sensible proposals in its paper. It said that Exelon will address those environmental effects for the pebble bed modular reactor in the first application. Then it said that based on the resolution, the NRC should undertake a rulemaking to create a similar tables for the pebble bed modular reactor.

The staff's preliminary position is first, yes we agree that we have to deal with those environmental impacts on a plant specific basis for the first pebble bed application. But, we then said that it's premature now to say just what kind of a rulemaking we might undertake once those issues are resolved.

I've made a note, that aside from the PBMR, the staff is now working on getting a rulemaking started to update tables S-3 and S-4, for LWR's. But, that's a different issue.

FACILITATOR CAMERON: Thanks, Dennis, for that overview.

Kevin, Ron, any comments to start us off on that one?

MR. SIMARD: This is Ron Simard again. We agree with the staff about the -- it's just not timely enough for a rulemaking on the environmental impacts of gas-cooled technologies until we've got a little more experience.

The way we anticipate this being handled is that in the early site permit process, the environmental report has to provide some sort of bounding assessment of what these types of environmental impacts would be.

So, our understanding of the way this might work in the case of Part 52, is that if a COL applicant references an early site permit, he'll have the ability to, and he'll be required to demonstrate, that for this particular design the environmental impacts are in fact, bounded by the material in the early site permit.

Until the NRC and the industry know enough about the environmental impacts to be able to have a rulemaking, that's how we understand this would work.

FACILITATOR CAMERON: Dennis, any comment or question on the early site permit issue? I'm not saying you have to have one, I just want to give you

an opportunity.

MR. ALLISON: No, it sounds like a sensible way to proceed.

FACILITATOR CAMERON: All right. Questions or comments on the fuel cycle issues that Dennis has been discussing?

Okay. Thank you, Dennis.

Let's next go on to Tim Harris, who's going to talk about waste confidence. Right, Tim?

MR HARRIS: Yes. Thanks, Chip. Good afternoon. I'd like to talk about the fuel cycle impacts as they pertain to waste confidence. The issue that Exelon put forth, was that PBMR would fall within the scope of NRC's Waste Confidence Rule.

Just to give you a background on waste confidence, waste confidence was a generic determination that spent fuel generated reactor could be stored safely without significant environmental impacts, at least 30 years beyond the license life of a reactor. The rule was codified in 10 CFR 51.23.

(Slide change)

MR. HARRIS: The rule was based on five findings. The first was for safe disposal capacity for spent nuclear fuel, would be technically feasible in a mined geologic repository.

The second was that a geologic repository, one or more, would become available within the first quarter of the 21st century.

The third finding was that high level waste and spent nuclear fuel could be managed safely, until such time as a repository became available.

The fourth finding was, that if necessary, you could store spent nuclear fuel safely, without significant impact, at reactor sites or ISFISI's.

The fifth finding was that safe, independent onsite or offsite storage capacity would be available if needed.

The issue was whether or not Exelon needed to consider storage of spent nuclear fuel following reactor license in their environmental reports, or if the NRC needed to consider those in its NEPA actions. Just as a note that the impacts associated with storing spent nuclear fuel during operations, would be considered. The waste confidence only applies to following the license life.

Exelon's position was that the waste confidence decision did apply to PBMR fuel, that the waste confidence decision did not distinguish between types of fuel, that the Commission considered both LWR fuel and non-LWR fuel, and that DOE was responsible

for disposal of the spent nuclear fuel.

A preliminary position, while closely related to the findings within waste confidence, were that for findings 1, 2, and 5. Those essentially apply to all reactors in that they basically dealt with the availability of disposal.

Specifically, finding number 3 related to management of spent nuclear fuel. We noted that even though the waste confidence rule was primarily based on LWR fuel, which was the predominant fuel type and continues to be the predominant fuel type, other fuels from reactors were considered, such as pebble bed fuel in non-LWR reactors.

The 4th finding, that dealt with non-significant impacts, were that since the time of waste confidence decision, significant experience has been gained in dry cask storage, that material degradation processes in dry cask storage are well understood, and that NRC maintain regulatory authority over the spent nuclear fuel at the installation.

The preliminary findings were that we agreed with Exelon that PBMR did seem to fall within the waste confidence decision. However, they noted that DOE should take, or be responsible for, disposing spent nuclear fuel. We suggested in the paper and in

subsequent discussions with Exelon, that they should hold separate discussions with DOE on that issue.

FACILITATOR CAMERON: Okay. Thank you, Tim.

Any comments, questions, starting out over here with Exelon, Kevin?

MR. BORTON: Kevin Borton from Exelon. Exelon agrees that the PBMR is covered by 10 CFR 51.23. There are some issues regarding the timing of when fresh fuel casks and spent fuel casks occur in referencing the COL. I think we would like to probably continue discussions with the NMSS regarding some of those comments in the SECY. But, all in all, as it's stated in our original position, we felt that it was within the scope of 51.23 and we agree with the NRC's position on that.

MR. HARRIS: Do you know the casks, Kevin, that are related to the timing and procedures associated with getting approvals of --

MR. BORTON: Approval of the casks, yes.

MR. HARRIS: Okay. I think we brought that up actually, in our initial meeting back in April of last year.

FACILITATOR CAMERON: Any discussion points, questions on either the waste confidence

section or this last exchange on the cask certification?

Okay. Thank you, Tim.

Let's keep moving along. We'll check in a little bit and see if we need to take a break or whether you want to try and move through, so think about that.

We now have Clare Goodman on Human Factors. Clare is going to talk about talk about operator staffing.

MS. GOODMAN: Good afternoon. In the area of operating staffing requirements, there are three issues that are being considered, at this time. The first one involves a table in the regulations in 10 CFR 50.54, that only covers one, two, or three, and uses the word "units". But, the regulation is silent, with respect to staffing requirements for sites with more than two units, modules, whatever, with a common control room.

Second, and related to that first issue, is the question, should a pebble bed facility be allowed to control more than two reactors or modules from one control room?

The third issue under consideration at this time, is should a pebble bed facility be allowed

to operate with control room staffing complements less than would be required by individual reactor units as our regulations currently refer to them?

(Slide change)

MS. GOODMAN: The next slide gives an overview of the Exelon proposals with regard to these operator staffing requirements. Basically, it's our understanding that Exelon believes the NRC staffing, currently for light water reactors, is excessive for even the first two modules, because of the passive nature of the plants.

In the first bullet here, Exelon proposes that the operator staffing requirements for three or more modules, and that would be actually up to ten modules, may be controlled from a common control room. The staff, as I am going to say in the next slide, agrees that a safety justification to accomplish that, would be necessary.

The second bullet here, is associated with again, the regulation table in 10-54, with regard to the number of operators required per unit, per control room, or per module.

Lastly, the third bullet is proposed basically, in order to avoid duplicate reviews in subsequent pebble bed reactor reviews.

On the next slide, we summarize the preliminary staff position. We certainly agree with the applicant or Exelon, the need to provide a safety justification for operating more than two modules from one common control room. The staff also agrees that an exemption for alternate level staffing, as is written in our current regulations, would be necessary.

In particular, we do believe, that an adequate justification for any proposed staffing levels, would be required. We believe that the justification must analyze the number and qualifications of personnel in a systematic manner that basically shows a thorough understanding of the task requirements.

(Slide change)

MS. GOODMAN: The key to such a justification of alternate staffing, would be a detailed function and task analysis followed by performance demonstrations on either a control room simulator or some kind of control room prototype.

To accomplish this, Exelon would first need to develop a concept of operations, as I'm calling it here, considering the list of items listed below. For example, as part of the concept of

operations, you'd have to consider the role of the operator. Is the operator an active participant or is it just a passive monitoring position?

The level of automation would have to be considered. Is it manual, is it fully automatic?

The modes of operation would have to be considered for different modes of operation.

Multiple module control would obviously come into play, since you're talking about up to ten modules. How many operators would be involved as you from two to three, all the way up to ten modules.

The control room design would be a factor. How many work stations? Would there be one work station for all ten modules?

Refueling during operation is something they discussed and that also would come into play and does come into a play when we talk about staff responsible for refueling.

Personnel qualifications would also need to be considered as well as would procedures. The procedures, whether they're symptom based, computerized, hard copy, etc.

But, basically, in summary, any staffing analysis should determine the number and background of the personnel for the full range of plant conditions.

That would include normal, abnormal emergencies, as well as plant conditions such as maintenance, surveillance, or testing.

On my next slide, I've provided a list of the current rules and regulations, all of which play some piece in operator staffing requirements.

Part 55 covers the licensing of operators.

Part 50.34(f), among other things, covers the SPDS console requirement that we currently have.

Part 50.54(k,m) cover operator staffing requirements. I discussed these in the previous slide.

In the current Exelon proposal, they did not discuss such issues as the interpretation of the phrase, operator at the controls. For example, if multimodule or pebble bed is manipulating say reactivity in one reactor, if I were a CRT, is that operator at that controls of all the other reactors? This is an issue that's covered, at present, in Regulatory Guide 1.114, but would obviously be slightly different when we're dealing with multiple modules.

NUREG-0800 covers other staffing issues and we would certainly expect in the future, in any application, that these would be covered.

With respect to the issue really at hand, probably the most important NUREG, is NUREG-0711, which is the Human Factors Engineering Program Review Model. This does have an element in it that covers staffing. The central tenant of 0711 is that all human factors aspects of the plant should be developed, designed, and evaluated on the basis of a structured top down systems analysis using human factors principles.

Then, on my last slide, I have shown sort of a diagram of the program review model or NUREG-0711. Once the concept of operations is determined, as we've just discussed, Exelon could follow this Human Factors Engineering Review Model as described in NUREG-0711.

It was specifically developed during the review of three certified advanced reactor designs and the guidelines do include an element on operator staffing. As you can see in the first column, which is probably the column that we're most talking about here today, the staffing element interfaces with a number of other elements, most specifically, including the task analysis element.

And, that really concludes what I have to say today.

FACILITATOR CAMERON: Okay. Thanks, Clare.

Any comments from Exelon, or questions about what types of information is going to be necessary?

MR. BORTON: Yes, Kevin Borton from Exelon. We understand that we'll need to justify exemptions from the regulations. We will be looking at detailed functional task analysis in that justification. However, how and when we demonstrate those functional task analysis, I think we'll need further interaction with the NRC working towards that and recognizing that the regulations do have ample guidance in there about human factoring.

FACILITATOR CAMERON: Clare, do you want to say anything about that while I'm going over to Ed?

MS. GOODMAN: When you use the word regulation, are you using it loosely to include NUREG-0711, or are you limiting, when you use the word regulation, to just Part 50.54(k,m)?

MR. BORTON: We recognize both the rules and regulation, in addition to that, the guidance that you outlined in your reg, so, not admitting that guidance.

MS. GOODMAN: I don't think I have

anything else to add.

FACILITATOR CAMERON: Okay. We have a comment or question here, Ed?

MR. LYMAN: Ed Lyman from the Nuclear Control Institute. I would just like to say that I do approve of the staff's caution in this area. It seems like a pretty foolish proposal right now to try and introduce exemptions when you don't even know what kind of operator actions are going to be required to deal with multiple transients of this plan.

So, I would caution that the performance demonstrations on simulators are obviously going to be a key element of qualifying any proposal that Exelon might have for reducing staff and clearly the choice of accidents you're going to look at is also going to be important.

For instance, take a seismic event that causes multiple transients in the different modules, than usual events. You are going to need dedicated operators, I would think, to deal with each one individually. I'm not sure any human, any mortal, would be able to cope with some of the transients you could come up with. So, you're going to have to give challenging transients in these demonstrations.

FACILITATOR CAMERON: Okay. Thank you,

Ed.

MS. GOODMAN: We certainly agree. There are a number of issues to deal with. In fact, we do agree that the worst case accident scenario is often not necessarily the one that the operators are the busiest and the most challenged. You do need to look all, you know, of range of possibilities and we recognize that.

FACILITATOR CAMERON: Okay and Clare, to return to an overarching theme for all of these issues, the primary way, or at least anticipated way that this issue is going to be closed out, would be through an exemption request from Exelon and an evaluation by the NRC.

MS. GOODMAN: Simply put. I think it's probably a little bit more complex than just one submittal and one --

FACILITATOR CAMERON: Yes, but that's the major vehicle for people to look for, if there interested in this issue.

MS. GOODMAN: Yes.

FACILITATOR CAMERON: Okay. Yes, let's go back here.

Hi, Raji.

MS. TRIPATHI: I'm Raji Tripathi from the

Office of Research. I'm wondering if either staff or Exelon has specifically talked about the initial operator examination as well as recertification as to who would administer the tests. I'm absent any current experience with the pebble bed modular reactors. Have you talked about that course and what the preferences would be, and so on?

FACILITATOR CAMERON: Did you want to hear the first part of it again?

Raji, do you mind repeating that for them?

MS. TRIPATHI: I'm sorry. My question was about the initial, as well as the recertification for operator qualification examinations, as currently for the light water reactors, so that the licensees have been recently administering the tests. But, for pebble bed modular reactors, have either you or staff, has talked about it as to the details of operator class and qualification examination, as to who will prepare it and do the testing?

FACILITATOR CAMERON: Thank you.

Rod, do you want to handle this? All right.

MR. KRICH: In the long term, I think the answer to your question is, we would work it the same way as done for light water reactors, which is, mostly

now it's done where the licensee writes the exam. The NRC inspects the program and then also spot inspects the testing. So. ultimately, that's what we would get to, but I think preliminarily, at least initially, there would be a lot more involvement with the NRC. I fully expect that.

FACILITATOR CAMERON: Thanks, Rod.

Anybody on the staff have anything to add to that, at this point?

MS. GAMBERONI: I think we're in agreement that there's still a ways to go.

FACILITATOR CAMERON: Okay. Thank you, Marsha and Clare.

We have two more issues, I think, maybe, does anybody have any objection is we sort of push on with those, rather than taking a break, at this point? And you can always excuse yourself if we don't take a break. Amy?

MS. CUBBAGE: If we expect any issues at the end that might be lengthy, we might want to take a break and then come back, I mean.

FACILITATOR CAMERON: Okay. Well, it's 2:40 p.m. now, do you want to take a break until 3:00 p.m. and come back and then finish up. We'll probably still finish up with plenty of time. So, why don't

you take 20 minutes. The coffee shop is open.

MS. CUBBAGE: Yes, you should be able to go back up to the lobby area and come back down without going through security again.

FACILITATOR CAMERON: Okay, we'll see you at 3:00 p.m.

MS. CUBBAGE: If anyone hasn't signed the sign-in sheet, please make sure you do so. It's outside the door.

(Whereupon, the foregoing matter went off the

record at 2:38 p.m. and went back on the record

at 3:00 p.m.)

FACILITATOR CAMERON: Okay. Before we get started with our next presentation, if anybody is interested in looking at the Trip Reports that were being talked about, but I take it that these are the staff Trip Report and not the Powers Trip Report. But, here are the ADAMS accession numbers, ML01365002, is the transmittal letter of the staff Trip Report from this workshop. The Trip Report itself is at MLO1365004. If we can get a ADAMS accession number for the Powers Trip Report, we'll get that also.

Now we're going to continue on with

financial issues. We're going to begin that discussion with Janice Moore. Janice is the Assistant General Counsel for the Reactor Program.

Janice, do want to give us an overview on this?

MS. MOORE: Sure. The first issue that's covered under the financial issues is the financial protection requirements. The issue was, should Price-Anderson financial protection requirements be applied to each modular reactor unit or to the PBMR facility? The Price-Anderson Act is contained in Section 170 of the AEA, is implemented by 10 CFR Part 140.

Exelon's proposal is that the NRC has the authority to grant an exemption from 10 CFR 140.11, for the first PBMR application to treat multiple modules as a site, as a single nuclear facility, for the purposes of the Price-Anderson Act. Exelon, in addition, proposes that rulemaking be initiated to provide that a multiple module facility is a single facility under the Price-Anderson financial protection requirements.

Exelon also proposes that we initiate rulemaking to amend the definition of utilization facility and nuclear reactor in 10 CFR 50.2, to include multiple reactor modules at a single site.

The staff's position on this issue was, and continues to be, that there are substantial doubts that the Commission has the authority to treat multiple reactors as one facility, for the purposes of the retrospective assessment. Congress should amend, and in fact has undertaken legislation to amend the Price-Anderson Act to assure that multiple modules at a single site are treated as one facility.

The House has passed H.R. 2983, which would amend Section 170 to allow a combination of two or more modular reactors, each rated 100 - 300 megawatts electric, with a combined rated capacity of not more than 1300 MWe, to be considered one facility.

In a similar amendment, which is part of the Senate Bill S. 517, has passed the Senate. This legislation has not yet however, gone to conference.

FACILITATOR CAMERON: Okay. Thanks, Janice.

Let's stop there and go out for any comments, questions, on the Price-Anderson issue.

Ron, Kevin, anything? Or Russ, anybody?

MR. SIMARD: It's Ron Simard. No, just a brief statement that if the House and Senate do reach agreement on this definition, that seems to be what we think the NRC would need to make the conforming change

to Part 140. So, that seems to be the path to resolution.

FACILITATOR CAMERON: And, let me just clarify one thing in that regard. Janice, if the legislation is enacted and there would have to be a NRC rulemaking to amend our rules to provide for this?

MS. MOORE: That's right.

FACILITATOR CAMERON: Okay. I guess that's a question that we'll need to come to when we get there.

MS. MOORE: Right. The exact nature and scope of the rulemaking would be decided at that time, depending on the language that's actually approved by Congress.

FACILITATOR CAMERON: Okay. Other comments, Price-Anderson?

Let's go back to Ed Lyman.

MR. LYMAN: Thanks. I think it's obvious that my organization would oppose this provision and would fight it to the extent that we can, because there is simply no technical basis right now, for concluding that it's appropriate to reduce the insurance requirements for these reactors based on a reduction in the rated power.

You really need to substantiate that by

showing there is connection between that and a reduction in the long term consequences, property damage, land and oil, associated with a severe accident. I'm not sure that analysis has been done because that would depend more on the average burn up of the fuel in the core and the quantity of fission products, that are not proportional to the power in the reactor.

Until there is a technical basis for concluding that the consequences is severe accident at this site of ten of these modules, it would be comparable to that of a single reactor of the same power. Until that technical analysis is done, I think there is no basis for this, anyway. And that's not withstanding the fact that the existing assessments are probably ten times too small, at least, to cover the real damage from a beyond design basis nuclear accident.

FACILITATOR CAMERON: Thanks, Ed.

When Ed referred to his organization, it's Nuclear Control Institute, for people who don't know that.

Okay, Kevin or Ron?

MR. KRICH: Just a quick comment. We also note that in the draft Part 52, there's a new Section

140.11(c), that's included in that, which we think given what Janice went through, in terms of legislation, is really unnecessary. In fact it goes kind of in the other direction. Just to note that there is that in the draft proposal.

FACILITATOR CAMERON: Thank you.

Anybody else on Price-Anderson.

Okay. Let's go on to antitrust.

MS. MOORE: Okay. The antitrust authority and responsibilities are set forth in Section 105 of the Atomic Energy Act. 10 CFR 50.33a requires prospective applicants to submit antitrust review information to the NRC nine months prior to the application for a construction permit or a combined license.

Exelon proposes that the NRC define a new category of merchant generating companies and exempt them from antitrust review. Exelon also proposes that the NRC initiate rulemaking to clarify that merchant plants are not required to submit antitrust information.

The ability of the NRC to accept certain applicants from the NRC's antitrust review requirements is being addressed by the Office of General Counsel, at this time, in coordination and

consultation with appropriate Federal agencies. There is, at this time, not a schedule for completion of that activity.

FACILITATOR CAMERON: Okay. Questions from Exelon? Any information you want to provide on that?

MR. SIMARD: This Ron Simard. Let me just make an observation. It does look as if there's a sound basis for eliminating the NRC antitrust review given the oversight that exists among NRC and the Department of Justice and FTC.

But to Ms. Moore's last comment, I call your attention back to one of the opening slides, the potential schedule for when you might see the first COL under here. If you do the math, back up nine months from that, I would hope that you can put in place a resolution schedule that would support that.

FACILITATOR CAMERON: Okay. I think that point is noted with the staff.

Any other comments on antitrust review authority.

Okay. I think we're going to move on now.

Thank you very much, Janice.

We're going to go to Mike Dusaniwskyj. Mike's going to talk about financial qualifications

and then later about decommissioning. Mike.

MR. DUSANIWSKYJ: Financial qualifications are generally sought after by the NRC, not necessarily to regulate commerce but to generally get a feeling for reasonableness as to whether or not an entity would have the financial resources with which to conduct safely any nuclear power plant.

That comes from the authority of Section 182 of the Atomic Energy Act. It specifically said in 10 CFR 50.33 as to what kind of information the agency is looking for.

When it comes time for a brand new applicant to come through, and we are anticipating it sometime between now and the year 2004, that financial information will probably be the same in nature as we generally get for license amendments or we get for license extensions from a non-utility. So, the basic outline has been established and we know what kind of information we're going to be looking for.

The only one's that are not required to bring a five year forecast are utilities because their financial qualifications are presumed.

(Slide change)

MR. DUSANIWSKYJ: We recognize that the next application can come in under one of four

different schemes. You can come in under Part 50. You can come in under Part 52. You can come in as a non-utility or as a utility.

From that, we only recognize that as far as how many licenses will be concerned will definitely determine what kind of information we're going to be looking for. If it is a one license for multiple units, or for multiple modules, it's a five year projection. That's what we really need. If we're talking about multiple licenses for multiple modules, we're looking for an application per license. One way or the other, 10 50.33, covers the kind of information that we would be looking for.

And on top of that, basically, beyond this just a five year projection, which again is the standard type of information that we would be looking for, we also look for a sensitivity analysis. Generally, we would like to see very similar in nature to what we've been doing so far license amendments.

What would happen if the price of electricity were to drop by ten percent, and given that in this case we're talking about a new unit with no history, see what would happen if capacity drops by ten percent, what would that do to your finances?

One point has to be managed and talked

about right now. We do no regulate commerce. We are not trying to determine what the price should be. We're not trying to determine how an operator will have, or will not operate financially. We are looking to see if there's enough financial resources to run the plant safely. That's it.

One of things that I like to point out is that the Commission has the authority to always get more information. We have that one little escape clause that says that we can ask for just about any kind of information we deem fit. We don't take that arbitrarily, but we do look for the reasonableness of a forecast. You can't audit a forecast. You can only judge it for reasonableness.

We anticipated again, one application per license. And again, it can be for one module or for multiple modules. I know that Exelon has asked for the Commission to create a new class of applicant that would not be required to submit financial qualifications information. That type of a class enactment will probably take place after we have some experience as to what kind of license we're going to be talking about after we have some experiences to what kind of a module, what kind of reactor we're talking about.

FACILITATOR CAMERON: Thank you, Mike.

Comments, questions on this aspect?

Kevin, Ron, Russ?

MR. SIMARD: Just a comment. We agree it's not necessary to have a rulemaking to support the first COL applications, that there are enough flexibility and the current alternatives.

Again, like the comment made earlier on the environmental impacts from the gas-cooled reactor fuel cycle, with these merchant plants, we agree it seems prudent to wait till we get a little more experience and then engage in rulemaking at that time.

FACILITATOR CAMERON: Mike, any comment on that?

MR. DUSANIWSKYJ: No comment.

FACILITATOR CAMERON: All right. Jim?

MR. RICCIO: Just that in a post Enron environment, I don't think NRC should be wading any financial requirements.

For those of us that remember when Exelon was Commonwealth Edison, the Commission had serious concerns about Commonwealth Edison's ability to actually finance the safe operation of the reactors that were currently operating.

I hope that your financial position is a

little better off now with the merger with PECO, but you're not the only one's looking to build new reactors. We also have Entergy and Dominion that are spinning off limited liability corporations left and right.

I think the public would be well served if the NRC would require the financial requirements be met and not exempt any merchant plant from that requirement

FACILITATOR CAMERON: Okay. Thanks, Jim.

Any other comments on this particular issue?

Yes.

MR. MATTHEWS: John Matthews from Morgan Lewis. I just wanted to point out that in terms of talking about the possibility in the future of creating an exemption from the financial qualifications review similar to the existing exemption for electric utilities, there obviously would be criteria, I think, that would be sound that the agency could initiate such a rulemaking. For example, entities that have investment grade bond ratings that themselves have, meet certain asset requirements, are certainly as financially qualified presumptively, as many electric utilities that fall

under the existing exemption under NRC's rules.

I think it would be appropriate to consider that in the future.

FACILITATOR CAMERON: Thank you, John.

Anybody else?

Mike, do you want to talk about decommission?

MR. DUSANIWSKYJ: I suppose I have too

(Slide change)

MR. DUSANIWSKYJ: 10 CFR 50.75 outlines how decommissioning shall be funded for any nuclear power plant in the United States. Generally speaking again, we look at an applicant under two distinct categories; either as a utility or a non-utility.

As a non-utility, the six options, sinking fund, prepayment, corporate parent guarantee, surety bonds, contracts, or a combination of the foregoing, are open to a non-utility except for sinking fund. That is something that is only exclusively allowed by a utility.

The idea behind this is that it's not necessarily that we are looking to have decommissioning funds available in case of technical problem with the unit, but also to recognize that in the brave new world of re-regulation, I refuse to use

the term deregulation, competition will have winners and they will have losers.

Recognizing that these are assets with values that we'll probably wind up going on the auction block and continuing, the option still should remain that we would have the money available for, in a worst case scenario, a decommissioning of the plant. Again, not necessarily because of a technical aspect but because of a business aspect.

(Slide change)

MR. DUSANIWSKYJ: Enron made a proposal that it once used an alternative decommissioning funding method, at the time.

(Slide change)

MR. DUSANIWSKYJ: The one point that has been brought out is the fact that our regulations do only cover for PWR's and BWR's for the actual amount that is necessary for minimum decommissioning funding. We do recognize that the new generation of nuclear power plants may be gas-cooled and therefore, will require a new set of regulations to determine what the amount should be.

I recognize that that is up for, how should I put this politely, debate. We will probably accept Exelon's site specific decommissioning fund

plan for the funding of that, I'm meaning how much money will be necessary.

And based on that will probably produce a formula very similar in nature to what is on the regulations now, something where we deal with a lump sum amount of money, a coefficient times the amount of thermal output. Then of course, moved forward into the future as to the time value of money.

The only major difference being of course, that the current regulations are based on dollars values of 1986. Any future type of a regulation of this nature will probably be based on a year sometime in the future.

The only thing of course is that of any type of site specific proposal for decommissioning the amount of funds necessary would be subject to review. We would want to make sure that NMSS would probably take a look at it to make sure that it does cover all the necessary features so that the funds associated with that action would be appropriate.

FACILITATOR CAMERON: All right.

Comments, questions? We'll start over here.

Kevin?

MR. BORTON: Exelon does understand that

PBMR specific method will need to be discussed with the NRC as regarding the different options. And that we're also looking currently at those options which best fits our needs. We'll have to do some more extensive look into that based on the SECY.

We would also ask the NRC, I guess, to also re-evaluate the basis for the original rule for that, in light of new power plants, in a merchant environment, as well, and have further discussions with the staff regarding some of those issues.

I think it is more than just a PBMR issue. It probably is a new industry issue under deregulated, I'm not certain what the term what you used was, but it's not just for a PBMR, it's also for all new plants trying to make a market entry into this new environment.

FACILITATOR CAMERON: Okay. Thank you, Kevin.

Anybody else on this issue? Jim?

MR. RICCIO: First a question. Has the NRC thought about having Exelon or any other new candidate for a reactor, front load their decommissioning fund, given the fact that we've only had -- the only really operating experience we've had with a gas-cooled reactor was Fort St. Vrain and that

didn't operate well and it didn't operate long. Since we don't have really any experience other than the THTR, I guess, is there any consideration being given to having a little bit more money upfront?

MR. DUSANIWSKYJ: Essentially that is the major difference between the utilities opportunities and a non-utilities opportunities. When you take away the sinking fund, you are essentially doing that. It's just a question of how you're going to fund it. You can either put cash up front, you may take into account two percent interest on that amount of money. You can also take into account nonbypassable charges or you may wind up using the corporate guarantee. Essentially, this is what those things do.

FACILITATOR CAMERON: Okay. Ron, you want to add to that?

MR. SIMARD: Referring back to slide number 47, there are basically six ways of assuring that you've got the money that you need. We're currently looking at one of them being the surety bond option. So, that's one approach that we're currently talking with some of the providers of insurance.

Again, the objective is to make sure that there is sufficient available. Prepayment upfront is one option, but all these other options are

equivalent. They all lead to the same result, namely, having adequate funds available.

MR. BORTON: And just one other clarification, there is probably another plant that you can add to your list which is Peach Bottom Unit One, which was owned and operated by PECO, now part of Exelon.

FACILITATOR: All right. Let's go to the final piece on this. Mike?

MR. DUSANIWSKYJ: Well, essentially this has already been covered.

(Slide change)

MR. DUSANIWSKJ: Essentially this what I've already tried to talk and cover already, is that it's not just a question of how you're going to wind up paying for the decommissioning but also the amount of money that we're going to have to determine is going to be necessary for decommissioning.

Again, I remind everyone that the ideas for minimum decommissioning funding assurance, it is not intended to be a catch all for all decommissioning costs. It is only as a good faith effort for an inevitable event, which would be a decommissioning of a plant eventually, whether it be 40, 60, or how many years down the road.

As I said, the one thing we will need is a new regulation to determine what gas-cooled reactors are going to need as far as the amount of money in question.

FACILITATOR CAMERON: Any further comments on that? Rod?

MR. KRICH: Mike, this is Rod Krich with Exelon. Mike, we looked at your comment in the SECY there also about the present value of the decommissioning cost should not be large a modular reactor. Right now, and this is very, very rough so don't hold me to these numbers, but it's looking like we'll have put up about $20,000,000.00 per module, by the current rule. That's a fair amount of money. I think we're looking at some other alternatives to propose to you or some other way to work the current rule.

FACILITATOR CAMERON: Any other comments on decommissioning funding?

Okay. Thank you, Mike.

As Marsha, I think, started us off with, or perhaps it was Amy, these issues that were on the agenda today, were issues originally brought up by Exelon, and there's a couple that the staff added on.

Before we close today, are there other

issues anybody wants to put on the table before we adjourn?

Okay and I would like to thank you and I'm going to turn it over to Marsha for some final words. Don't forget about the technical issues session tomorrow. You may want to tell them where that is again. Marsha?

MS. GAMBERONI: First of all, I'd like to thank everyone for coming and all your participation. Just going back to what I stated as a success of today's meeting, it would have been that you have a better understanding of the staff's position and hopefully we've given that to you, and that we've obtained your input on these issues. I think we have a number of notes and your comments that we will take into consideration.

The take aways I see from this are for any of the stakeholders, as a reminder that Amy is still accepting written comments until April 10th, I believe. Some of you mentioned that you will be making additional submittals on some of these issues. And for us, it is to revise or to further expand our position in a SECY that would be out in the June time frame.

I'll just mention again tomorrow's

meeting, PBMR. It's in this building, the third floor, B45. The ASLB hearing room. The issues that are going to be discussed tomorrow are fuel qualification plan and early site permit aspects.

Again, with that, I just want to thank you for your participation and look forward to your participation in the future meetings and any future workshops.

FACILITATOR CAMERON: And we do have one question, a clarification here.

MR. BORTON: Kevin Borton. I just want to ask a clarification. As far as the date that was in the Federal Notice for the information to be submitted to the NRC, are you also considering, based on what we stated today about further interactions with the NRC, the ultimate date, I would assume would be, input to the process prior to formulating a revised SECY or an additional SECY on these issues, by June?

MS. CUBBAGE: That was the thinking in the April 10th deadline was to give the staff time to incorporate any feedback and be able to meet our scheduled date for the SECY of June. Some of these issues, there will be other vehicles for providing feedback such as any proposed rules. There would be comment periods on those separate to the SECY paper

resolution.

FACILITATOR CAMERON: Okay. And one final point of information. Steve was kind enough to get us the ADAMS accession number. If you want the Powers Trip Report, the ADAMS accession number is ML020450645. And a correction on what I call the Trip Report before, it's the report on the workshop itself. It was prepared by the NRC staff. And again, the report number in ADAMS is ML01365004.

All right. Thank you.

(Whereupon, the public workshop was concluded at 3:30 p.m.)